

Amendments to the Claims

The current listing of the claims replaces all previous amendments and listings of the claims.

Claim 1 (Currently Amended): A plasma treatment apparatus comprising:

a vacuum vessel that houses an article to be ~~treated and into which a treatment gas is introduced~~ plasma-treated in a plasma region;

~~a lower electrode that is provided inside said vacuum vessel and onto which is placed the article to be treated;~~

an upper electrode main body that ~~is provided above said lower electrode to form a~~ forms the plasma region in said vacuum vessel, said upper electrode main body having formed therein an opening ~~through which passes light for detecting an extent of progress of plasma treatment of the article to be treated in the plasma region;~~

an upper electrode cover that is joined to a lower surface of said upper electrode main body and faces the plasma region, said upper electrode cover having formed therein a hole at a location corresponding to the opening of said upper electrode main body; and

~~a sensor that detects the extent of progress of plasma treatment of the article to be treated by detecting changes in intensity of reflected light from the article to be treated;~~

~~a tubular member that is provided in the vacuum vessel with a lower end thereof inserted in the opening; and~~

a window member that is made of a transparent member which is a separate body to the upper electrode cover, has a shape insertable into the hole of said upper electrode cover, and is retainably and upwardly removably fitted in the hole of said upper electrode cover.

Claim 2 (Currently Amended): An upper electrode cover for a plasma treatment apparatus, the plasma treatment apparatus comprising a vacuum vessel that houses an article

~~to be treated and into which a treatment gas is introduced, a lower electrode that is provided inside the vacuum vessel and onto which is placed the article to be treated~~ plasma-treated in a plasma region, an upper electrode main body that is ~~provided above the lower electrode to form a~~ forms the plasma region in the vacuum vessel, the upper electrode main body having formed therein an opening ~~through which passes light for detecting an extent of progress of plasma treatment of the article to be treated in the plasma region, a sensor that detects the extent of progress of plasma treatment of the article to be treated by detecting changes in intensity of reflected light from the article to be treated, a tubular member that is provided in the vacuum vessel with a lower end thereof inserted in the opening, and a window member that is made of a transparent member which is a separate body to the upper electrode cover, has a shape insertable into a hole formed in the upper electrode cover, and is retainably and upwardly~~ removably fitted in ~~[[a]]~~ the hole formed in of the upper electrode cover,

wherein the upper electrode cover is joined to a lower surface of the upper electrode main body and faces the plasma region; and

the hole of the upper electrode cover is formed in the upper electrode cover at a location corresponding to the opening ~~in~~ of the upper electrode main body, the hole having a shape complementary to a shape of the window member.

Claim 3 (Original): An upper electrode cover as claimed in claim 2, wherein the hole has a lower portion having a reduced diameter and an upper portion having an increased diameter.

Claim 4 (Original): An upper electrode cover as claimed in claim 2, wherein the hole opens into the plasma region.

Claim 5 (Original): An upper electrode cover as claimed in claim 2, which is made of quartz.

Claim 6 (Currently Amended): An upper electrode cover window member for a plasma treatment apparatus, the plasma treatment apparatus comprising a vacuum vessel that houses an article to be treated and into which a treatment gas is introduced, a lower electrode that is provided inside the vacuum vessel and onto which is placed the article to be treated plasma-treated in a plasma region, an upper electrode main body that is provided above the lower electrode to form a forms the plasma region in the vacuum vessel, the upper electrode main body having formed therein an opening through which passes light for detecting an extent of progress of plasma treatment of the article to be treated in the plasma region, and an upper electrode cover that is joined to a lower surface of the upper electrode main body and faces the plasma region, the upper electrode cover having formed therein a hole at a location corresponding to the opening of the upper electrode main body, a sensor that detects the extent of progress of plasma treatment of the article to be treated by detecting changes in intensity of reflected light from the article to be treated, and a tubular member that is provided in the vacuum vessel with a lower end thereof inserted in the opening,

wherein:

the window member comprises a transparent member which is a separate body to the upper electrode cover, has a shape insertable into a hole formed in the upper electrode cover, and is retainably and upwardly removably fitted in the hole of the upper electrode cover; and

the hole of the upper electrode cover has at least in part a shape complementary to a shape of the hole of the upper electrode cover at the location corresponding to the opening in the upper electrode main body such that the window member can be fitted in the hole.

Claim 7 (Original): An upper electrode cover window member as claimed in claim 6, wherein the hole has a lower portion having a reduced diameter and an upper portion having an increased diameter, and the upper electrode cover window member has a lower portion having a reduced diameter and an upper portion having an increased diameter that can be fitted in the lower portion and upper portion of the hole, respectively.

Claim 8 (Previously Presented): An upper electrode cover window member as claimed in claim 6, wherein the hole has a lower portion having a reduced diameter and an upper portion having an increased diameter, and the upper electrode cover window member presents a vertically symmetrical shape having a lower portion having a reduced diameter, an intermediate portion having an increased diameter, and an upper portion having a reduced diameter that can be fitted in the lower portion of the hole, the upper portion of the hole, and the opening in the upper electrode main body, respectively.

Claim 9 (Original): An upper electrode cover window member as claimed in claim 6, which is made of quartz.

Claim 10 (Original): An upper electrode cover window member as claimed in claim 6, which is made of sapphire.

Claim 11 (New) A plasma treatment apparatus as claimed in claim 1, further comprising a lower electrode that is provided inside said vacuum vessel and onto which is placed the article to be plasma-treated, and wherein said upper electrode main body is provided above said lower electrode.

Claim 12 (New) A plasma treatment apparatus as claimed in claim 1, further comprising:

a tubular member that is provided in the vacuum vessel with a lower end thereof inserted in the opening of said upper electrode main body, said tubular member having formed therein an inner hole; and

a sensor that detects intensity of light for detecting the extent of progress of the plasma treatment of the article to be plasma-treated,

and wherein the light passes through the opening of said upper electrode main body, the inner hole of said tubular member, and said window member.

Claim 13 (New) A plasma treatment apparatus as claimed in claim 12, wherein said sensor detects changes in intensity of light reflected by the article to be plasma-treated, the reflected light from the article to be plasma-treated passing through said window member, the inner hole of said tubular member, and the opening of said upper electrode main body.

Claim 14 (New) A plasma treatment apparatus as claimed in claim 13, wherein said sensor emits light through the opening of said upper electrode main body, the inner hole of said tubular member, and said window member into said vacuum vessel.

Claim 15 (New) A plasma treatment apparatus as claimed in claim 12, wherein said window member is in contact with a lower surface of said tubular member.

Claim 16 (New) A plasma treatment apparatus as claimed in claim 1, wherein said window member is fixed to said upper electrode cover by sticking a tape from an upper surface of said upper electrode cover over an upper end surface of said window member.

Claim 17 (New) A plasma treatment apparatus as claimed in claim 1, wherein the opening of said upper electrode main body has a shape different from the shape of the hole of said upper electrode cover.

Claim 18 (New) A plasma treatment apparatus as claimed in claim 12, wherein the inner hole of said tubular member has a shape different from the shape of the hole of said upper electrode cover.